



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada

1713 Bedford Row

Halifax, N.S./Halifax, (N.É.)

Halifax

Nova Scotia

B3J 1T3

Bid Fax: (902) 496-5016

## REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

### Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

### Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

### Comments - Commentaires

### Vendor/Firm Name and Address

### Raison sociale et adresse du

### fournisseur/de l'entrepreneur

### Issuing Office - Bureau de distribution

Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions

1713 Bedford Row

Halifax, N.S./Halifax, (N.É.)

Halifax

Nova Scot

B3J 1T3

<b>Title - Sujet</b> Environmental Chamber	
<b>Solicitation No. - N° de l'invitation</b> 01804-200388/A	<b>Date</b> 2019-12-05
<b>Client Reference No. - N° de référence du client</b> 01804-20-0388	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$HAL-207-10840	
<b>File No. - N° de dossier</b> HAL-9-83126 (207)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2020-01-20</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Standard Time AST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Grieve, Bronwen	<b>Buyer Id - Id de l'acheteur</b> hal207
<b>Telephone No. - N° de téléphone</b> (902) 943-2394 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF AGRICULTURE AND AGRI-FOOD RESEARCH AND DEVELOPMENT CENTRE 32 MAIN STREET KENTVILLE NOVA SCOTIA B4N1J5 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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File No. - N° du dossier

Buyer ID - Id de l'acheteur  
ha1207  
CCC No./N° CCC - FMS No./N° VME

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**ANNEX “D” ..... 24**

INTEGRITY PROVISIONS – LIST OF DIRECTORS .....24

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There is no security requirement applicable to the Contract.

### **1.2 Requirement**

The requirement is detailed under Article 6.2 of the resulting contract clauses.

### **1.3 Debriefings**

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### **1.4 Trade Agreements**

The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA) and the Canadian Free Trade Agreement (CFTA).

### **1.5 epost Connect service**

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information."

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## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2019-03-04), Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days  
Insert: 120 days

### 2.2 Submission of Bids

Bids must be submitted only to the Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified below by the date and time indicated on page 1 of the bid solicitation:

Bid Receiving Public Works and Government Services Canada / Réception des soumissions  
Travaux publics et services gouvernementaux  
1713 Bedford Row  
Halifax, NS B3J 1T3

Email for epost Connect:

[TPSGC.RARceptionSoumissionsNE-ARBidReceivingNS.PWGSC@tpsgc-pwgsc.gc.ca](mailto:TPSGC.RARceptionSoumissionsNE-ARBidReceivingNS.PWGSC@tpsgc-pwgsc.gc.ca)

**Note:** Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

Facsimile number: (902) 496-5016

### 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

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## 2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

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## PART 3 - BID PREPARATION INSTRUCTIONS

### 3.1 Bid Preparation Instructions

- If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid  
Section II: Financial Bid  
Section III: Certifications  
Section IV: Additional Information

- If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

Section I: Technical Bid (2 hard copies)  
Section II: Financial Bid (1 hard copy)  
Section III: Certifications (1 hard copy)

If there is a discrepancy between the wording of the soft copy on electronic media and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

- If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will have priority over the wording of the other copies.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of hard copy of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573) (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

### Section I: Technical Bid

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In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

## **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment.

### **3.1.1 Electronic Payment of Invoices – Bid**

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex “C” Electronic Payment Instruments, to identify which ones are accepted.

If Annex “C” Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

### **3.1.2 Exchange Rate Fluctuation**

C3011T (2013-11-06), Exchange Rate Fluctuation

### **3.1.3 SACC Manual Clauses**

## **Section III: Certifications**

Bidders must submit the certifications and additional information required under Part 5.



## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **4.1 Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **4.1.1 Technical Evaluation**

##### **4.1.1.1 Mandatory Technical Criteria**

Bidders must clearly demonstrate compliance with each mandatory technical criteria (Annex A1). Failure to demonstrate compliance will result in the bid being deemed non-responsive, and be given no further consideration.

#### **4.1.2 Financial Evaluation**

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

### **4.2 Basis of Selection**

#### **4.2.1 Basis of Selection - Mandatory Technical Criteria**

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

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## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

#### 5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

#### 5.2.3 Additional Certifications Precedent to Contract Award

##### 5.2.3.1 Status and Availability of Resources

*SACC Manual* clause [A3005T](#) (2010-08-16), Status and Availability of Resources

#### **5.2.3.2 Education and Experience**

**5.2.3.2.1** *SACC Manual* clause [A3010T](#) (2010-08-16), Education and Experience

**5.2.3.2.2** *SACC Manual* clause [A3015C](#) (2014-06-26), Certifications - Bid

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## PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract.

### 6.2 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex "A".

### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 6.3.1 General Conditions

[2010A](#) (2018-06-21), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 6.4 Term of Contract

#### 6.4.1 Delivery Date

All the deliverables must be received and installed on or before March 31, 2020.

#### 6.4.2 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

### 6.5 Authorities

#### 6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Bronwen Grieve  
Title: Supply Officer  
Public Works and Government Services Canada  
Acquisitions Branch  
Address: 1713 Bedford Row  
Halifax, NS B3J 1T3  
  
Telephone: 902-943-2394  
E-mail address: [bronwen.grieve@tpsgc-pwgsc.gc.ca](mailto:bronwen.grieve@tpsgc-pwgsc.gc.ca)

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform

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work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### 6.5.2 Project Authority

The Project Authority for the Contract is: *(will be inserted at time of contract award)*

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

### 6.5.3 Contractor's Representative

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

## 6.6 Payment

### 6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as specified in Annex "B" for a cost of \$\_\_\_\_\_. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.6.2 Limitation of Price

SACC Manual clause [C6000C](#) (2017-08-17), Limitation of Price

### 6.6.3 Single Payment

SACC Manual clause [H1000C](#) (2008-05-12), Single Payment

### 6.6.4 Electronic Payment of Invoices – Contract

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The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

## **6.7 Invoicing Instructions**

- 1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
- 2. Invoices must be distributed as follows:
  - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

## **6.8 Certifications and Additional Information**

### **6.8.1 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

## **6.9 Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in \_\_\_\_\_.

## **6.10 Priority of Documents**

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- a) the Articles of Agreement;
- b) the general conditions 2010A (2018-06-21), General Conditions - Goods (Medium Complexity);
- c) Annex A, Requirement;
- d) Annex B, Basis of Payment;
- e) the Contractor's bid dated \_\_\_\_\_

## **6.11 SACC Manual Clauses**

SACC Manual clause B7500C (2006-06-16), Excess Goods

SACC Manual clause B1501C (2018-06-21), Electrical Equipment

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## 6.12 Insurance – No Specific Requirement

*SACC Manual* clause G1005C (2016-01-28), Insurance – No Specific Requirement

## ANNEX "A"

### REQUIREMENT

#### Environmental Room

##### Background Information

An environmental room equipped with temperature and humidity control capabilities will be used for conducting research on the growth of plants hydroponically in an indoor system. The research that will be conducted will guide the industry in plant selection, soilless growth media selection, utilization of customized LED light recipes and other growing conditions important to the successful growth of indoor hydroponically grown agricultural crops.

##### Environmental Room Specifications

##### Mandatory Requirements:

##### Environmental Room

Line	Performance Specification
<b>A</b>	<b>Local Control System</b>
A1	<b>Programming:</b> <ul style="list-style-type: none"><li>Control system must store a minimum 16 real-time user-entered programs each containing up to 48 lines with one minute resolution.</li><li>Each program defines a single 24-hour period.</li><li>Daily programs must be linked to simulate multi day or seasonal programs.</li><li>At a minimum, the controllers must allow the following adjustments at both the chamber and remotely (when available for set up):<ul style="list-style-type: none"><li>set points;</li><li>actual temperature;</li><li>humidity levels; and</li><li>light level.</li></ul></li></ul>
A1.1	Control system must have a minimum 25Mb storage capacity for user-entered Programs
A1.2	Local control system must have high resolution colour LCD touch screen controller.
A1.3	Color touch screen LCD display interface must be at least 6" in size diagonally.
A1.4	Programs must transition from conditions in either step mode or ramp mode.
A1.5	The controller must be of industrial grade.
A2	<b>Data logging and graphing:</b> <ul style="list-style-type: none"><li>All controlled parameters must be recordable to provide a log of actual experimental results.</li><li>Stored data must be transferable to a desktop computer via a portable storage device, or the network (Ethernet connected computer).</li></ul>



A2.1	Program must allow users to view historical data (temperature, humidity, lighting and CO <sub>2</sub> ) in graph form and compare actual performance to programmed performance.
A2.2	The data (temperature, humidity, lighting and CO <sub>2</sub> ) needs to be available remotely so that it can be accessed through a network-connected computer.
A2.3	Trend data must be available for download through a USB port on the control system.
A3	<b>Alarms:</b> <ul style="list-style-type: none"> <li>System must allow the user to set alarms to occur when temperature is out of range of the set temperature. This must be configurable for other controlled parameters including humidity or lighting.</li> <li>The alarms must be audible and visual (i.e. color coded).</li> <li>Alarm set points must be programmable on a per experiment basis and determination of action required when an alarm is activated must also be programmable.</li> </ul>
A4	<b>Security:</b> <ul style="list-style-type: none"> <li>Multiple password-protected levels (a minimum of three discrete levels) must be provided for users, administrators, technicians, and manufacturer's service personnel.</li> </ul>
A5	<b>Trouble shooting:</b> <ul style="list-style-type: none"> <li>On board diagnostics screen must allow for service personnel to view all inputs and outputs including access to the service life of components including lamp burning hours, valve cycle numbers and similar component functioning.</li> </ul>
A6	<b>Start-Up Delay:</b> <ul style="list-style-type: none"> <li>Chambers must be programmable with varying restart times to reduce start-up loads in the event of a facility power failure.</li> </ul>
A7	<b>Communications:</b> <ul style="list-style-type: none"> <li>Controller must be shipped communications-ready for hookup to a local area network.</li> </ul>
A8	<b>Power protection:</b> <ul style="list-style-type: none"> <li>Control system must be supplied with surge suppression, and an uninterrupted power supply to protect against surge conditions, power spikes, and momentary loss of power.</li> </ul>
A9	<b>Alarm contacts:</b> <ul style="list-style-type: none"> <li>Alarm contacts for connection to a building management system must be provided with unit.</li> </ul>

<b>B</b>	<b>Chamber Unit Construction</b>
B1	<b>Interior Growth Area Dimensions:</b> 7 ft 4 inches wide X 15 ft deep X 9 ft 2 inches height.
B2	<b>Exterior Dimensions:</b> 8 ft wide X 15 ft 8 inches deep X 9 ft 6 inches height.
B3	<b>Cabinet Inside Wall Construction:</b> Must incorporate bonded paneling construction with minimum 4" of foamed-in-place CFC-free high density insulation. All panels must be assembled from interior with camlock fasteners.
B4	<b>Chamber Floor:</b> Existing cement floor the unit will be installed on must be painted with a grey epoxy-based paint.
B5	<b>Interior Finish:</b> Must be white enamel baked on smooth minimum 24ga. galvanized steel.

B6	<b>Exterior Finish:</b> Must be white enamel baked on smooth or patterned 24ga galvanized steel.
B7	<b>Door (single door):</b> <ul style="list-style-type: none"> <li>• In -fitting 36" x 78" (915 mm x 1980 mm) door</li> <li>• Must have inside safety release handle</li> <li>• Must be ramped hinge, self-closing type, with stainless steel pin and nylon cam-type bearing and aluminum finish.</li> <li>• Must have light tight gaskets and keyed magnetic locks.</li> <li>• Doors must open from the outside for safety purposes.</li> </ul>
B8	<b>Control Panel:</b> <ul style="list-style-type: none"> <li>• Must be mounted on the left hand side of the door incorporating lockable access doors to house the temperature controller and relays for system operation.</li> <li>• The door ajar alarm must be imbedded in the controller.</li> <li>• Panels must include Electrical safety Authority certificate.</li> <li>• All wiring must be concealed in conduit and all circuit breakers, relays and electrical devices to be rail mounted.</li> </ul>
B9	<b>Instrument Ports:</b> <ul style="list-style-type: none"> <li>• Provide a minimum of two ports, of a minimum of 2" (50 mm) in diameter, for pass through access to the inside of the chamber area.</li> <li>• Ports must be provided with light tight caps.</li> </ul>
B10	<b>Receptacle:</b> <ul style="list-style-type: none"> <li>• Must provide wall mounted 18 - 120 volt GFCI power receptacles powered from the control panel.</li> <li>• All power wiring must be enclosed in conduit, embedded in wall and ceiling systems.</li> </ul>
B11	<b>Verified Product:</b> <ul style="list-style-type: none"> <li>• Major sections of the environmental room (walls, controllers etc) must be factory assembled, tested and fully crated prior to shipment.</li> <li>• Copy of verification in checklist format that the product has been assembled meeting all specifications must be received by the Project Authority prior to delivery.</li> </ul>
B12	<b>Anchoring:</b> The environment room must have provision to be attached and sealed to the floor.
B13	<b>Automatic watering:</b> <ul style="list-style-type: none"> <li>• The environmental room must have a hose bib connection that is connected to the local controls system for timed control of automatic watering.</li> <li>• The environmental room must provide 2 hose-bib's for connection to domestic water supply.</li> </ul>
B14	<b>Service Lighting:</b> <ul style="list-style-type: none"> <li>• Must be vapor proof, 120 V LED fixtures.</li> <li>• Must be connected to the light switch and pilot light on exterior of the unit at the door entrance and factory prewired.</li> </ul>
B15	Fresh air must be introduced through the conditioning system and exhausts through a pressure relief vent on the front of the room.
<b>C</b>	<b>Temperature Control</b>
C1	<b>Range:</b> Chamber must meet the following temperature ranges: <ul style="list-style-type: none"> <li>• +10°C to +30°C.</li> <li>• Design must be tested to meet the above conditions based on ambient temperature of no greater than +35°C.</li> </ul>
C2	<b>Control:</b> Must have $\pm 0.1^{\circ}\text{C}$ , at control point.
C3	<b>Temperature Safety Limits:</b> Chamber must provide the following safety limits:

C3.1	Primary: Provide a programmable high and low temperature limit tracking alarm that automatically follows the programmed set point.
C3.2	Secondary: Provide an independent, high and low temperature safety limit alarm.
C3.3	Audible and visual alarms must indicate for both limit conditions as stipulated above.
C3.4	<b>Sensing Package:</b> Sensors must be located in a self-contained, portable aspirator, providing measurement and recording from different user determined locations within the chamber.
D	<b>Refrigeration and Environment Conditioning System:</b>
D1	<b>Refrigeration system:</b>
D1.1	<ul style="list-style-type: none"> <li>Must be an Outdoor Air-Cooled Condensing Unit that contains: <ul style="list-style-type: none"> <li>the condenser,</li> <li>hermetic or semi hermetic compressor,</li> <li>receiver,</li> <li>suction accumulator,</li> <li>electronic 3-way proportional valve,</li> <li>control and pressure regulating valves; and</li> <li>electrical disconnect.</li> </ul> </li> <li>Must include: <ul style="list-style-type: none"> <li>1) a complete weatherized hood and crankcase heater for low ambient conditions and powered through the control panel; and</li> <li>2) refrigeration pipe insulation composed of unjacketed black Armaflex.</li> </ul> </li> </ul>
D1.2	Electrical: 60Hz -208 V-3 phase-3 wire plus ground.
D1.3	Inter-connecting refrigeration and electrical lines must be included for connection between the chamber and the condensing unit up to for up to a maximum of 60' (combined horizontal and vertical distance).
D1.4	The condenser unit must be installed on the roof of the facility building.
D2	<b>Evaporator unit:</b>
D2.1	Evaporators must only be located on the exterior of the chamber.
D2.2	Must have low profile grills mounted in chamber interior to distribute air uniformly downward.
D2.3	Must utilize 2 evaporators in redundant configuration sized for 50% of total chamber load.
D2.4	<p>Each evaporator must</p> <ul style="list-style-type: none"> <li>provide dual flow and forced-convection,</li> <li>be a packaged unit type, and</li> <li>be installed on the packaged evaporator system with an integral high density plastic drain pan.</li> </ul> <p>Must provide an adjustable expansion thermostatic expansion valve, with strainer, hot gas inlet tee and be externally equalized.</p>
D2.5	<p>Entire cooler assembly must</p> <ul style="list-style-type: none"> <li>be readily accessible for cleaning</li> <li>non metallic, including the evaporator housing, to resist corrosion.</li> </ul>
D2.6	An electronic liquid line and hot gas modulating valves designed for full 0% to 100% modulation must be provided.

D2.7	Air circulation motors must: <ul style="list-style-type: none"> <li>• be ball bearing,</li> <li>• have 45°C rated lifetime sealed and</li> <li>• be designed to operate at 208V single-phase service.</li> </ul>
D2.8	Refrigerant: Condensing unit must be charged with an environmentally friendly CFC-free and HCFC-free refrigerant.
D2.9	Monitoring: <ul style="list-style-type: none"> <li>• Control systems must be able to log and alarm system condition should operational values exceed user specified alarm value.</li> <li>• Refrigeration system operation must be monitored by control system, including visual and audible alarm.</li> </ul>
<b>E</b>	<b>Humidity Control</b>
E1	<ul style="list-style-type: none"> <li>• Chamber must provide additive humidity function designed to meet the following range of 50-80%RH at temperatures programmed between 10°C-30°C with all growth lighting turned ON.</li> <li>• Additive humidity must be through use of atomizing spray nozzles and must control humidity to within <math>\pm 5\%</math> RH of set point.</li> <li>• System must incorporate a dry humidity sensor to directly measure humidity in %RH.</li> </ul>
<b>F</b>	<b>Utility Requirements:</b>
F1	Chambers must be designed for the following Electrical Service: 60Hz: 120/208V – 3 phase - 4 wire plus ground.
<b>G</b>	<b>Delivery, Installation and Training</b>
G1	Packaging and shipping: Packing and shipping must be in accordance with the industry standard for all items to ensure their safe arrival at destination. Packing slips must accompany the shipment.
G2	Installation Qualifications and Certifications: Individuals completing the work on-site must provide evidence they are qualified. Each Refrigeration Mechanic, Plumber, Electrician or other tradesperson must submit a copy of their license as proof of qualifications to the Technical/Project Authority prior to installation.
G2.1	Electrical Certification: All electrical equipment supplied under the Contract must be certified or approved for use in accordance with the Canadian Electrical Code, Part 1, before delivery, by a certified organization accredited by the Standards Council of Canada. Proof of certification must be given to the Technical Authority before delivery.
G2.2	Utility Connections: All utility connections required from existing infrastructure to the units will be the cost and responsibility of the vendor to organize. The unit must have all utility connections labeled appropriately.
G2.3	Training: Complete on-site user training and instructions must be provided for research staff, support staff and maintenance personnel for a minimum of 4 hours. (Estimated 3 people)
<b>H</b>	<b>Warranty and After Sales Service</b>
H1	Warranty: Manufacturer must provide warranty on equipment and labor for a minimum of 36 months. Proof and details of warranty must be provided upon request from the Project Authority.

H1.1	If Warranty Maintenance and Repairs Services are to be carried out on the AAFC site the service person <b>must</b> arrive on site to perform the work within 72 hours from the time that the Contractor is notified.
H1.2	If Warranty Maintenance and Repairs Service are to be carried on outside of the AAFC site, shipping and customs fees are the responsibility of the Contractor.
H1.3	The Contractor must be capable of providing warranty service, on an "as and when" requested basis, and must have ready access to parts inventory from an authorized service/repair facility.
H1.4	Most of the service work must be able to be performed from outside the room ensuring minimal disruption during unexpected service events.
I	<b>Manuals</b>
I1	Number: The supplier must provide three (3) complete sets of user documentation, technical specifications and complete drawings in English with delivery. If available, a link to must be provided for access to an electronic copy of the operational manual and electrical drawings.

**Delivery Location:**

Agriculture and Agri-Food Canada  
Kentville Research and Development Centre  
32 Main Street  
Kentville, NS B4N 1J5

## ANNEX "A1"

### MANDATORY TECHNICAL EVALUATION

**Instructions:** Bidders **must** indicate whether or not they comply with the Mandatory Technical Criteria. Bidders must include one (1) copy of descriptive literature; if available, for the item(s) offered in sufficient detail to clearly indicate compliance with each of the individual requirements from the Mandatory Technical Criteria detailed herein.

Bidders **should** comment /cross reference the page number and highlight the specification in your technical data sheets or brochure to demonstrate and support your compliance for each of the Mandatory Technical Criteria.

The Bidder **must** address each Mandatory Technical Criteria listed below and must indicate whether the product/service offered "Meets" or "Does Not Meet".

Bidders must provide as much detail as possible to support your comments and your claims of compliance for each specification.

**NOTE:** The Crown is under NO obligation to seek clarification of the bid(s) or the supporting technical documentation provided. Failure to meet any of the following will render your proposal non-compliant and will be given no further consideration.

Item	Description	Compliant (Yes or No)	Bidder Reference Page Number
<b>1</b>	<b>Installation Qualifications and Certifications:</b>		
1.1	Refrigeration Mechanic certification		
1.2	Plumber certification		
1.3	Electrician certification		
<b>2</b>	<b>Electrical Certification:</b>		
2.1	All electrical equipment supplied under the Contract must be certified or approved for use in accordance with the Canadian Electrical Code, Part 1.		
<b>3</b>	<b>Technical Criteria:</b>		
3.1	Control system must have a minimum 25Mb storage capacity for user-entered Programs		
3.2	Chambers must be designed for the following Electrical Service: 60Hz: 120/208V – 3 phase - 4 wire plus ground.		
3.3	Chamber must meet the following temperature ranges: <ul style="list-style-type: none"><li>+10°C to +30°C.</li></ul>		

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**ANNEX "B"**

**BASIS OF PAYMENT**

Bidders must submit firm unit prices for each item listed below to be given further consideration. A financial bid addressing only a portion of the requirement will be declared non-responsive.

Pricing offered must be in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

No further charges will be allowed.

Item	Description	Unit of Measurement	Qty	Unit Price	Extended Price
1	Environmental Chamber as per specifications in Annex "A", items A through F.	Each	1		
2	Installation as per specifications in Annex "A" item G2.	Lot	1		
3	Training as per specifications in Annex "A" item G2.3	Lot	1		
4	36 month extended warranty as per specifications in Annex "A" item H.	Lot	1		
Total (GST/HST not included)					

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**ANNEX "C"**

**ELECTRONIC PAYMENT INSTRUMENTS**

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ( ) VISA Acquisition Card;
- ( ) MasterCard Acquisition Card;
- ( ) Direct Deposit (Domestic and International);
- ( ) Electronic Data Interchange (EDI);
- ( ) Wire Transfer (International Only);
- ( ) Large Value Transfer System (LVTS) (Over \$25M)



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**ANNEX "D"**

**INTEGRITY PROVISIONS – LIST OF DIRECTORS**

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

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2. For a Partnership, General Partnership or Limited Partnership - the names of all current partners;

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3. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

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4. In the case of a joint venture - For a Joint Venture - the names of all current members of the Joint venture;

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5. For an individual - the full name of the person

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